

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
8 July 2004 (08.07.2004)

PCT

(10) International Publication Number
WO 2004/056866 A1

(51) International Patent Classification⁷: **C07K 14/705**,
A61K 38/17, A61P 11/06, C12N 5/12, C12Q 1/68

Strömbergintie 14 B 41, FIN-00380 HELSINKI (FI).
SALMIKANGAS, Paula [FI/FI]; Aurankaari 2 B 8,
FIN-01800 KLAUKKALA (FI).

(21) International Application Number:

PCT/FI2003/000973

(74) Agent: **OY JALO ANT-WUORINEN AB**; Iso
Roobertinkatu 4-6 A, FIN-00120 HELSINKI (FI).

(22) International Filing Date:

19 December 2003 (19.12.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/435,846	20 December 2002 (20.12.2002)	US
60/437,895	3 January 2003 (03.01.2003)	US
60/458,767	26 March 2003 (26.03.2003)	US
60/486,000	9 July 2003 (09.07.2003)	US

(81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, EG, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT (utility model), PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (*for all designated States except US*): **GENEOS OY** [FI/FI]; Tukholmankatu 2, 2. krs, FI-00250 Helsinki (FI).

(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **LAITINEN, Tarja** [FI/FI]; Myllytie 18, FIN-04400 JÄRVENPÄÄ (FI). **KERE, Juha** [FI/FI]; Lahntie 1, FIN-02170 ESPOO (FI). **LAITINEN, Lauri, A.** [FI/FI]; Katiskakuja 3 as 6, FIN-02230 ESPOO (FI). **POLVI, Anne** [FI/FI]; Kalliopurontie 21 A 4, FIN-02920 ESPOO (FI). **MÄKELÄ, Siru** [FI/FI]; Sankaritie 7 A 12, FIN-00320 HELSINKI (FI). **VENDELIN, Johanna** [FI/FI]; Kilonrinne 7 B8, FIN-02610 ESPOO (FI). **PULKKINEN, Ville** [FI/FI];

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **ASTHMA SUSCEPTIBILITY LOCUS**

(57) Abstract: The present invention describes a susceptibility locus which is functionally related to asthma. The locus maps within human chromosome 7p15-p14. The invention also describes a novel human gene, GPRA. The invention provides diagnostic methods and materials for analysing allelic variation in said locus and the GPRA gene. The invention also provides polypeptides encoded by GPRA gene and antibodies binding to said polypeptides. The invention further provides pharmaceutical compositions for the treatment of asthma, other IgE-mediated disease, chronic obstructive pulmonary disease or cancer.

WO 2004/056866 A1